

January 4, 2013

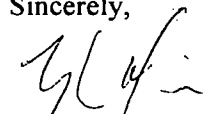
Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
901 North 5th Street
Kansas City, KS 66101

Re: National Mine Tailings Site Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period October 1, 2012 through October 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0600.

Sincerely,



Ty L. Morris, P.E., R.G.
Vice President

TLM/jms
Enclosure

c: Mark Nations – TDRC
Matt Wohl – TDRC (electronic only)
Kevin Lombardozzi – NL Industries, Inc.
John Kennedy – City of Park Hills
Norm Lucas – Park Hills – Leadington Chamber of Commerce
Kathy Rangen – MDNR
Tim Skoglund – Barr Engineering

07CR

40408409

4.2



Superfund

DU00

National Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: October 1, 2012 – October 31, 2012

1. Actions Performed and Problems Encountered This Period:

- a. Work at the site continued on the West Area. This work focused on the task of rocking the area that had been surveyed. This included placing a 6-inch layer of crushed rock filter on the graded surface and a 12-inch layer of slope riprap on top of the crushed rock filter. As of the end of the period, work on this task had been completed.
- b. Work at the site began on the task of repairing Commerce Drive. This work focused on the task of removing the asphalt so that the road could be repaved by the City of Park Hills. As of the end of the period, the existing asphalt had been removed. As it was not possible to remove this material without removing the chat and tailings below the asphalt, this material was placed in the disposal area located on the southwest side of the West Area. It is anticipated that the City of Park Hills will proceed with paving activities in the near future.
- c. Work at the site also continued on the Mine Shaft Area. This work focused on the investigation of the area to determine what work needs to be completed. As of the end of the period, it was determined that due to the lack of observable mine waste on the site and the extensive nature of vegetative cover no additional removal activities were needed. However, the inspection did note that the concrete structure believed to be a mine shaft was in need of some minor repairs. These findings were discussed with the EPA project coordinator during his visit to the site on October 10, 2012. It was agreed to proceed as described above.
- d. Work at the site continued on the task of meeting with the landowners who may be affected by the removal action activities. This included meeting with landowners who signed an access agreement prior to April 1, 2008, which needed to be amended, as well as landowners who have not signed agreements. As of the end of the period, the following had been accomplished:

Landowners that own property within the site boundary

Total number of landowners = 22

Landowners who signed an access agreement prior to 04/01/08 = 18

Landowners who signed an access agreement after 04/01/08 = 1

Landowners who are reviewing the access agreement = 3

Landowners who have refused to sign the access agreement = 0

Landowners who still need to be met with concerning the access agreement = 0

Total number of landowners who need to sign the amendment letter = 18

Landowners who have signed the amendment letter = 16

Landowners who are reviewing the amendment letter = 1

Landowners who refused to sign the amendment letter = 0

Landowners who still need to be met with concerning the amendment letter = 1

(Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

Landowners that own property immediately adjacent to the site boundary

Total number of landowners = 27

Landowners who signed an access agreement prior to 04/01/08 = 11

Landowners who signed an access agreement after 04/01/08 = 6

Landowners who are reviewing the access agreement = 4

Landowners who have refused to sign the access agreement = 3

Landowners who still need to be met with concerning the access agreement = 3

Total number of landowners who need to sign the amendment letter = 11

Landowners who have signed the amendment letter = 11

Landowners who are reviewing the amendment letter = 0

Landowners who refused to sign the amendment letter = 0

Landowners who still need to be met with concerning the amendment letter = 0

(It is not anticipated that it will be a challenge to work around the property owned by the three landowners that refused to sign the access agreement based on location of the property in relationship to the work that needs to be completed. Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

2. Analytical Data and Results Received This Period:

- a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Report for July 2012 was received. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

The July 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the National #3 (Water Plant) TSP monitor on 07/02/12 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the TSP monitors on 07/04/12 due to the holiday.

3. Developments Anticipated and Work Scheduled for Next Period:

- a. Complete work in the Mine Shaft Area.
- b. Finish the work on Commerce Drive.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.
- e. Begin demobilization activities.

4. Changes in Personnel:

- a. None.

5. Issues or Problems Arising This Period:

- a. None.

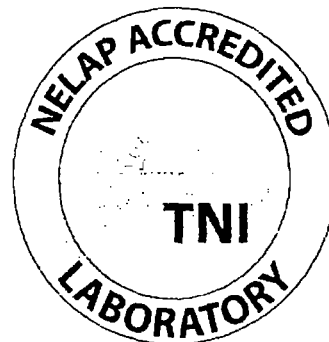
6. Resolution of Issues or Problems Arising This Period:

- a. None.

End of Monthly Progress Report

November 02, 2012

Allison Olds
Barr Engineering Company
1001 Diamond Ridge
Suite 1100
Jefferson City, MO 65109
TEL: (573) 638-5007
FAX: (573) 638-5001



RE: National MTS - 25/86-0003

WorkOrder: 12100828

Dear Allison Olds:

TEKLAB, INC received 2 samples on 10/17/2012 10:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: Barr Engineering Company**Work Order:** 12100828**Client Project:** National MTS - 25/86-0003**Report Date:** 02-Nov-12**This reporting package includes the following:**

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	4
Laboratory Results	5
Sample Summary	7
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Quality Control Results	9
Receiving Check List	15
Chain of Custody	Appended

Client: Barr Engineering Company**Work Order:** 12100828**Client Project:** National MTS - 25/86-0003**Report Date:** 02-Nov-12**Abbr Definition**

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|---|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| X - Value exceeds Maximum Contaminant Level | |

Client: Barr Engineering Company**Work Order:** 12100828**Client Project:** National MTS - 25/86-0003**Report Date:** 02-Nov-12**Cooler Receipt Temp:** 1.0 °C

This report was revised on 11/02/2012 per Terri Olson's request. The reason for the revision is add the Method Blank and LCS to the QC report for Zinc. Please replace report dated 10/22/2012 with this report. MLA 11/02/12

Locations and Accreditations**Collinsville**

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email kmccclain@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email dthompson@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2013	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2013	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2013	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2013	Springfield
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2013	Collinsville
Arkansas	ADEQ	88-0966		3/14/2013	Collinsville
Illinois	IDPH	17584		4/30/2013	Collinsville
Kentucky	UST	0073		5/26/2013	Collinsville
Missouri	MDNR	00930		4/13/2013	Collinsville
Oklahoma	ODEQ	9978		8/31/2013	Collinsville

Client: Barr Engineering Company

Work Order: 12110723

Client Project: National MTS - 25/86-0003

Report Date: 28-Nov-12

Lab ID: 12110723-001

Client Sample ID: Nat-East

Matrix: AQUEOUS

Collection Date: 11/14/2012 10:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993 (TOTAL)								
Sulfate	NELAP	200	S	225	mg/L	20	11/28/2012 5:01	R170923
<i>MS and/or MSD did not recover within control limits due to matrix interference.</i>								
STANDARD METHOD 4500-H B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		8.03		1	11/16/2012 8:18	R170567
STANDARD METHODS 2340 C								
Hardness, as (CaCO ₃)	NELAP	5		520	mg/L	1	11/16/2012 14:07	R170603
STANDARD METHODS 2540 C (TOTAL)								
Total Dissolved Solids	NELAP	20		630	mg/L	1	11/19/2012 18:37	R170714
STANDARD METHODS 2540 D								
Total Suspended Solids	NELAP	6		< 6	mg/L	1	11/15/2012 17:54	R170561
STANDARD METHODS 2540 F								
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	11/15/2012 17:00	R170564
STANDARD METHODS 5310 C, ORGANIC CARBON								
Total Organic Carbon (TOC)	NELAP	1.0		< 1.0	mg/L	1	11/16/2012 12:40	R170625
EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	11/19/2012 19:14	83478
Zinc	NELAP	10.0		147	µg/L	1	11/19/2012 19:14	83478
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	11/16/2012 16:29	83449
Zinc	NELAP	10.0		153	µg/L	1	11/16/2012 16:29	83449
STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA								
Lead	NELAP	2.00	X	5.64	µg/L	1	11/16/2012 13:50	83431
STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)								
Lead	NELAP	2.00	X	5.84	µg/L	1	11/16/2012 8:55	83435

Client: Barr Engineering Company
 Client Project: National MTS - 25/86-0003
 Lab ID: 12110723-002
 Matrix: AQUEOUS

Work Order: 12110723
 Report Date: 28-Nov-12

Client Sample ID: Nat-NW

Collection Date: 11/14/2012 11:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993 (TOTAL)								
Sulfate	NELAP	20		74	mg/L	2	11/20/2012 21:56	R170781
STANDARD METHOD 4500-H B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		8.18		1	11/16/2012 8:19	R170567
STANDARD METHODS 2340 C								
Hardness, as (CaCO ₃)	NELAP	5		230	mg/L	1	11/16/2012 14:07	R170603
STANDARD METHODS 2540 C (TOTAL)								
Total Dissolved Solids	NELAP	20		242	mg/L	1	11/19/2012 18:37	R170714
STANDARD METHODS 2540 D								
Total Suspended Solids	NELAP	6		< 6	mg/L	1	11/15/2012 17:54	R170561
STANDARD METHODS 2540 F								
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	11/15/2012 17:00	R170564
STANDARD METHODS 5310 C, ORGANIC CARBON								
Total Organic Carbon (TOC)	NELAP	1.0		1.0	mg/L	1	11/16/2012 13:06	R170625
EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	11/19/2012 19:20	83478
Zinc	NELAP	10.0		< 10.0	µg/L	1	11/19/2012 19:20	83478
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Cadmium	NELAP	2.00		< 2.00	µg/L	1	11/16/2012 16:40	83449
Zinc	NELAP	10.0		< 10.0	µg/L	1	11/16/2012 16:40	83449
STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA								
Lead	NELAP	2.00		< 2.00	µg/L	1	11/16/2012 14:00	83431
STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)								
Lead	NELAP	2.00		< 2.00	µg/L	1	11/16/2012 9:06	83435

Sample Summary

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
12100828-001	Nat-East	Aqueous	5	10/16/2012 12:05
12100828-002	Nat-NW	Aqueous	5	10/16/2012 11:40

Dates Report

<http://www.teklabinc.com/>
Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

Sample ID	Client Sample ID Test Name	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
12100828-001A	Nat-East Standard Methods 2540 F	10/16/2012 12:05	10/17/2012 10:00		10/17/2012 13:47
12100828-001B	Nat-East EPA 600 375.2 Rev 2.0 1993 (Total) Standard Method 4500-H B, Laboratory Analyzed Standard Methods 2340 C Standard Methods 2540 C (Total) Standard Methods 2540 D	10/16/2012 12:05	10/17/2012 10:00		10/18/2012 1:52 10/17/2012 13:56 10/17/2012 15:20 10/18/2012 18:07 10/17/2012 18:21
12100828-001C	Nat-East EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA	10/16/2012 12:05	10/17/2012 10:00	10/17/2012 13:53 10/17/2012 14:50	10/18/2012 20:41 10/18/2012 10:49
12100828-001D	Nat-East EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)	10/16/2012 12:05	10/17/2012 10:00	10/17/2012 16:36 10/17/2012 14:09	10/18/2012 11:49 10/18/2012 13:14
12100828-001E	Nat-East Standard Methods 5310 C, Organic Carbon	10/16/2012 12:05	10/17/2012 10:00		10/18/2012 12:19
12100828-002A	Nat-NW Standard Methods 2540 F	10/16/2012 11:40	10/17/2012 10:00		10/17/2012 13:47
12100828-002B	Nat-NW EPA 600 375.2 Rev 2.0 1993 (Total) Standard Method 4500-H B, Laboratory Analyzed Standard Methods 2340 C Standard Methods 2540 C (Total) Standard Methods 2540 D	10/16/2012 11:40	10/17/2012 10:00		10/19/2012 9:41 10/17/2012 13:58 10/17/2012 15:20 10/18/2012 18:08 10/17/2012 18:21
12100828-002C	Nat-NW EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total) Standard Methods 3030 E, 3113 B, Metals by GFAA	10/16/2012 11:40	10/17/2012 10:00	10/17/2012 13:53 10/17/2012 14:50	10/18/2012 21:10 10/18/2012 10:53
100828-002D	Nat-NW EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved) Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved)	10/16/2012 11:40	10/17/2012 10:00	10/17/2012 16:36 10/17/2012 14:09	10/18/2012 11:53 10/18/2012 13:17
100828-002E	Nat-NW Standard Methods 5310 C, Organic Carbon	10/16/2012 11:40	10/17/2012 10:00		10/18/2012 12:25

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

EPA 600 375.2 REV 2.0 1993 (TOTAL)

Batch R169463		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		< 10						10/17/2012

Batch R169463		SampType: LCS		Units mg/L						
SampID: LCS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Sulfate	10		22	20	0	109.2	90	110	10/17/2012	

Batch R169463		SampType: MS		Units mg/L						
SampID: 12100828-001BMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		100		326	100	218.8	107.0	90	110	10/18/2012

Batch R169463		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 12100828-001BMSD										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Sulfate		100		321	100	218.8	102.7	325.8	1.35	10/18/2012

Batch R169508		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		< 10						10/18/2012

Batch R169508		SampType: LCS		Units mg/L						
SampID: LCS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		21	20	0	103.0	90	110	10/18/2012

Batch R169547		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		< 10						10/19/2012

Batch R169547		SampType: LCS		Units mg/L						
SampID: LCS										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Sulfate		10		20	20	0	102.1	90	110	10/19/2012

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

STANDARD METHOD 4500-H B, LABORATORY ANALYZED

Batch R169403	SampType: LCS	Units								
SampID: LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Lab pH	1.00		6.98	7.00	0	99.7	99.1	100.8	10/17/2012	

Batch R169403	SampType: DUP	Units						RPD Limit 10		
SampID: 12100828-001BDUP										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Lab pH	1.00		7.98				7.980	0.00	10/17/2012	

Batch R169403	SampType: DUP	Units						RPD Limit 10		
SampID: 12100828-002BDUP										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Lab pH	1.00		8.41				8.410	0.00	10/17/2012	

STANDARD METHODS 2340 C

Batch R169407	SampType: MBLK	Units mg/L								
SampID: MB-R169407										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Hardness, as (CaCO3)	5		< 5						10/17/2012	

Batch R169407	SampType: LCS	Units mg/L								
SampID: LCS-R169407										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Hardness, as (CaCO3)	5		980	1000	0	98.0	90	110	10/17/2012	

Batch R169407	SampType: MS	Units mg/L								
SampID: 12100828-002BMS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Hardness, as (CaCO3)	5		600	400	220.0	95.0	85	115	10/17/2012	

Batch R169407	SampType: MSD	Units mg/L						RPD Limit 10		
SampID: 12100828-002BMSD										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Hardness, as (CaCO3)	5		600	400	220.0	95.0	600.0	0.00	10/17/2012	

TANDARD METHODS 2540 C (TOTAL)

Batch R169529	SampType: MBLK	Units mg/L								
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Dissolved Solids	20		< 20						10/18/2012	
Total Dissolved Solids	20		< 20						10/18/2012	
Total Dissolved Solids	20		< 20						10/18/2012	

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

STANDARD METHODS 2540 C (TOTAL)

Batch R169529		SampType: LCS		Units mg/L						
SampID: LCS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		1030	1000	0	102.8	90	110	10/18/2012

Batch R169529		SampType: LCSQC		Units mg/L					
SampID: LCSQC									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		1010	1000	0	100.8	90	110	10/18/2012
Total Dissolved Solids	20		964	1000	0	96.4	90	110	10/18/2012

Batch R169529		SampType: MS		Units mg/L					
SampID: 12100828-001BMS									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	20		1180	500	632.0	109.6	85	115	10/18/2012

Batch R169529		SampType: MSD		Units mg/L				RPD Limit 15		
SampID: 12100828-001BMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		1180	500	632.0	109.2	1180	0.17	10/18/2012

STANDARD METHODS 2540 D

Batch R169410		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Suspended Solids	6		< 6						10/17/2012	

Batch R169410		SampType: LCS		Units mg/L						
SampID: LCS										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Total Suspended Solids	6		97	100	0	97.0	85	115	10/17/2012	
Total Suspended Solids	6		98	100	0	98.0	85	115	10/17/2012	
Total Suspended Solids	6		98	100	0	98.0	85	115	10/17/2012	

Batch R169410		SampType: DUP		Units mg/L				RPD Limit 15			
SampID: 12100828-002B DUP										Date Analyzed	
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Total Suspended Solids		6		< 6				0	0.00	10/17/2012	

STANDARD METHODS 5310 C, ORGANIC CARBON

Batch R169504		SampType: MBLK		Units mg/L						
SampID: MBLK										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Organic Carbon (TOC)		1.0		< 1.0						10/18/2012

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

STANDARD METHODS 5310 C, ORGANIC CARBON

Batch R169504		SampType: LCS		Units mg/L						
SampID: LCS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Total Organic Carbon (TOC)	10.0		59.9	59.7	0	100.4	90	110	10/18/2012	

Batch R169504		SampType: MS		Units mg/L						
SampID: 12100828-002EMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Organic Carbon (TOC)		1.0		5.3	5.0	0.6800	91.8	85	115	10/18/2012

Batch R169504		SampType: MSD		Units mg/L				RPD Limit 10		
SampID: 12100828-002EMSD										Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed
Total Organic Carbon (TOC)		1.0		5.4	5.0	0.6800	95.0	5.270	2.99	10/18/2012

EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)

Batch 82578		SampType: MBLK		Units µg/L						
SampID: MB-82578										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Cadmium	2.00		< 2.00	2.00	0	0	-100	100	10/18/2012	
Zinc	10.0		< 10.0	10.0	0	0	-100	100	10/18/2012	

Batch 82578		SampType: LCS		Units µg/L						
SampID: LCS-82578										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Cadmium	2.00		46.8	50.0	0	93.6	85	115	10/18/2012	
Zinc	10.0		499	500	0	99.9	85	115	10/18/2012	

atch 82578		SampType: MS		Units µg/L						
ampID: 12100828-002DMS										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed	
Cadmium	2.00		46.9	50.0	0	93.8	75	125	10/18/2012	
Zinc	10.0		506	500	3.2	100.5	75	125	10/18/2012	

atch 82578		SampType: MSD		Units µg/L				RPD Limit 20		
mpID: 12100828-002DMSD										Date
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Analyzed	
Cadmium	2.00		46.5	50.0	0	93.0	46.9	0.86	10/18/2012	
Zinc	10.0		499	500	3.2	99.1	505.9	1.39	10/18/2012	

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

Batch 82566 SampType: MBLK Units µg/L
SampID: MB-82566

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		< 2.00	2.00	0	0	-100	100	10/18/2012
Zinc	10.0		< 10.0	10.0	0	0	-100	100	10/18/2012

Batch 82566 SampType: LCS Units µg/L
SampID: LCS-82566

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		50.0	50.0	0	100.0	85	115	10/18/2012
Zinc	10.0		520	500	0	104.0	85	115	10/18/2012

Batch 82566 SampType: MS Units µg/L
SampID: 12100828-001CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Cadmium	2.00		48.9	50.0	0	97.8	75	125	10/18/2012
Zinc	10.0		555	500	51.6	100.6	75	125	10/18/2012

Batch 82566 SampType: MSD Units µg/L
SampID: 12100828-001CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Cadmium	2.00		48.7	50.0	0	97.4	48.9	0.41	10/18/2012
Zinc	10.0		552	500	51.6	100.0	554.7	0.54	10/18/2012

STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA

Batch 82570 SampType: MBLK Units µg/L
SampID: MB-82570

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		< 2.00	2.00	0	0	-100	100	10/18/2012

Batch 82570 SampType: LCS Units µg/L
SampID: LCS-82570

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		13.4	15.0	0	89.0	85	115	10/18/2012

Batch 82570 SampType: MS Units µg/L
SampID: 12100828-002CMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		16.1	15.0	1.6001	96.9	70	130	10/18/2012

Batch 82570 SampType: MSD Units µg/L
SampID: 12100828-002CMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead	2.00		15.8	15.0	1.6001	95.0	16.1417	1.83	10/18/2012

Client: Barr Engineering Company

Work Order: 12100828

Client Project: National MTS - 25/86-0003

Report Date: 02-Nov-12

STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)

Batch 82567		SampType: MBLK		Units µg/L					
SampID: MB-82567									
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead	2.00		< 2.00	2.00	0	0	-100	100	10/18/2012

Batch 82567		SampType: LCS		Units µg/L						
SampID: LCS-82567										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead		2.00		13.9	15.0	0	92.9	85	115	10/18/2012

Batch 82567		SampType: MS		Units µg/L						
SampID: 12100828-002DMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lead		2.00		14.5	15.0	0	96.4	70	130	10/18/2012

Batch 82567		SampType: MSD		Units µg/L				RPD Limit 20		
SampID: 12100828-002DMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lead		2.00		13.9	15.0	0	93.0	14.4578	3.61	10/18/2012

Receiving Check List

<http://www.teklabinc.com/>

Client: Barr Engineering Company
Client Project: National MTS - 25/86-0003

Work Order: 12100828

Report Date: 02-Nov-12

Carrier: Rick Schmidt

Received By: TWM

Completed by:

On:

17-Oct-12

Timothy W. Mathis

Reviewed by:

On:

17-Oct-12

Michael L. Austin

Pages to follow: Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 1.0

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☐

NA ☒

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water - at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler.



Teklab Chain of Custody

Pg. 1 of 1

Workorder 12100828

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax: (618)344-1005

Barr Engineering Co.		
1001 Diamond Ridge, Suite 1100		
Jefferson City	MO	65109
National MTS - 25/86-0003		

Are the samples chilled? ☒ Yes ☐ No with: ☒ Ice ☐ Blue ice

Preserved in ☒ Lab ☐ Field 10-17-12

Cooler Temp 1.6 Sampler SBM

Comments

Invoice to Mark Nations. Results to Allison Olds and Mark Nations, mnations@doerun.com.
Matrix is surface water.
Metals: Cd, Pb, Zn

custody seal intact upon pickup

Contact Allison Olds eMail aolds@barr.com Phone 573-638-5007 Requested Due Date Standard Billing/PO Per contract with Doe Run

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	pH	T.S.S.	Sulfate	Settleable Solids	T.O.C.	Total Metals	Dissolved Metals	Hardness	Total Dissolved Solids			
12100828-001	Nat-East	10-16-12 12:05	Unpres	Aqueous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-002	Nat-NW	10-16-12 11:40	Unpres	Aqueous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Unpres	Aqueous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Teklab Inc.
Collinsville, MO 62234
(618) 344-1004

Relinquished By *	Date/Time	Received By	Date/Time
Steve Moikann	10-16-12 16:00	R. Schmidt	10/17/12 8:30
R. Schmidt	10/17/12 10:00		10-17-12 1000

* The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of client.